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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,470	03/08/2001	Gavriel J. Iddan	P-3112-US	4915

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EXAMINER	
DIEP, NHON THANH	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/800,470	IDDAN ET AL.	
	Examiner	Art Unit	
	Nhon T. Diep	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for **Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-30 and 56-59 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-30 and 56-59 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 08 March 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Kovacs et al (US 5,833,603).

Iddan et al discloses an in vivo video camera system comprising the same device for in vivo imaging, the device comprising: a housing, the housing enclosing (fig. 2) at least: at least one imaging camera (fig. 2, el. 24), at least one illumination source for illuminating a site in vivo (el. 20), an optical system (el. 22, 27, 29) for imaging the site in vivo onto the imaging camera and a transmitter (el. 28) for transmitting video output of the imaging camera as specified in claim 1; and the CMOS imaging camera comprises active pixel circuitry (inherently included). It is noted that Iddan et al does not particularly disclose that the imaging camera is CMOS imaging camera. Kovacs et al teaches that CMOS process can be used tin place of the CCD imager (col. 13, ln. 17-21). And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Iddan et al by using a CMOS imaging device in place of the CCD imaging device. Doing so would help to reduce cost of manufacturing and power consumption (col. 13, ln. 17-21).

3. Claims 1-2, 7, 10-14 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Zhou et al (US 5,909,026).

Iddan et al discloses an in vivo video camera system comprising the same device for in vivo imaging, the device comprising: a housing, the housing enclosing (fig. 2) at least: at least one imaging camera (fig. 2, el. 24), at least one illumination source for illuminating a site in vivo (el. 20), an optical system (el. 22, 27, 29) for imaging the site in vivo onto the imaging camera and a transmitter (el. 28) for transmitting video output of the imaging camera as specified in claim 1; wherein the optical system comprises an aspherical focusing lens (fig. 2, el. 29) as specified in claim 10; wherein the optical system further comprises at least one collimator for collecting remittent light (el. 22-27-29) as specified in claim 11; wherein the transmitter comprises an internal electronic switch for converting a logic of a normally open switch to a normally closed logic (col. 4, ln. 22-26, the fact the Iddan et al shows a system can be designed to images only when a muscles are squeezing to save power implies that the system through it transmitter controls the imaging camera and the illumination source) as specified in claims 12-14; and wherein the transmitter transmits via radio frequency (fig. 3A, el. 32) as specified in claim 59. It is noted that Iddan et al does not particularly disclose that the imaging camera is CMOS imaging camera. Zhou et al teaches an image device with on-chip frame memory suitable for imaging applications under low light condition wherein an active pixel sensor ("APS") is a light sensing device with sensing circuitry inside each pixel. Each active pixel includes a light sensing element and one or more active transistors within the pixel itself. The active transistors amplify and buffer the signals

generated by the light sensing elements in the pixels. In comparison with the widely used charge coupled devices (CCDs), an APS device has a number of unique and beneficial features. These features include the ability to receive and process input signals with the active pixels without the charge transfer process inherent in CCDs. An APS device is also compatible with CMOS processes. Elimination of the charge transfer allows APS devices to have a higher readout rate than those of CCDs and also to maintain their performance as the array size increases. Compatibility with CMOS processes allows many signal processing functions and operation controls to be integrated on an APS chip (col. 1, ln. 24- 40). And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Iddan et al by using a CMOS imaging device in place of the CCD imaging device. Doing so would help to reduce cost of manufacturing and power consumption. Moreover, the active pixels of APS devices allow non-destructive readout and random access (col. 1, ln. 42-45).

Re claim 2: Zhou et al shows the CMOS imaging camera comprises active pixel circuitry (col. 1, ln. 24- 40).

Re claim 7: the CMOS imaging camera is an ultra low powered camera and has reduced sensitivity to light in the red spectrum (col. 1, ln. 42-45 and further more, CCD imaging device is sensitive to light in the red spectrum, replacing CCD by CMOS would reduce the sensitivity to light in the red.spectrum).

Re claim 56: It is noted that Iddan et al does not particularly disclose that the length of the imaging device is about 30 mm; however Iddan et al does disclose that the

imaging device is in the shape of a swallowable capsule and most if not all swallowable capsule used in medical field are about 30mm in length and therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to design the imaging device of Iddan et al to have the comparable length with an actual medical swallowable capsule which is about 30mm so patients can easily swallow.

4. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Zhou et al (US 5,909,026) and further in view of Wong et al (US 6,594,036).

As applied to claims 1 and 2 above, it is noted that the combination of Iddan et al and Zhou et al does not particularly disclose that the CMOS imaging camera comprises a correlated double sampler for processing an analog signal produced by the active pixel circuitry (col. 4, ln. 33-39) as specified in claims 3 and 6; the CMOS imaging camera comprises an analog to digital converter having serial output (fig. 2, el. 120) as specified in claims 4 and 6; the CMOS imaging camera comprises an encoding and randomizing unit for defining frame and row parameters and for priming digital signals for transmission (col. 1, ln. 46-64) as specified in claims 5-6. Wong et al teaches a detailed CMOS imaging device comprises the CMOS imaging camera comprises a correlated double sampler for processing an analog signal produced by the active pixel circuitry (col. 4, ln. 33-39); an analog to digital converter having serial output (fig. 2, el. 120); the CMOS imaging camera comprises an encoding and randomizing unit for defining frame and row parameters and for priming digital signals for transmission (col. 1, ln. 46-64. And therefore, it would have been obvious to one of ordinary skilled in the

art at the time the invention was made when replacing the CCD imaging by the CMOS imaging would have included all of the important features associated with the CMOS imaging camera as taught by Wong et al. Doing so would help to reduce the bandwidth required to transmit signal wirelessly.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Zhou et al (US 5,909,026) and further in view of Perkins et al (US 6,106,457).

As applied to claim 1, it is noted that the combination of Iddan et al and Zhou et al does not particularly disclose that the illumination source is a white LED. Perkins et al teaches "as with the other illumination assemblies described herein, other suitable light sources, such as low-power surface-mounted or bulb-type white LEDs, can also be substituted" (col. 15, ln. 40-43). And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of the combination of Iddan et al and Zhou et al by using white LED source. Doing so would help to provide better images.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Zhou et al (US 5,909,026) and further in view of Leising et al (US 6,117,529).

As applied to claim 1 above, it is noted that the combination of Iddan et al and Zhou et al does not particularly disclose that the illumination source comprises a refracting crystal matrix having at least one blue LED chip integrated. Leising et al teaches the using of liquid crystal matrix for refraction and that organic materials which

are chemically similar to the oligophenylene or polyphenylene, have proven to be especially suited for blue LED applications (col. 15, ln. 40-43). And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of the combination of Iddan et al and Zhou et al by including refracting crystal matrix having at least one blue LED chip integrated in the illumination system of the combination of JP 5745833 and Adair et al. Doing so would help to provide better illumination source for organic electroluminescence devices and displays.

7. Claims 15, 23-28, 30 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Alfano et al (US 6,240,312).

Iddan et al discloses an in vivo video camera system comprising the same device for in vivo imaging, the device comprising a swallowable capsule for in vivo imaging of the gastrointestinal tract (fig. 9, el. 110); the capsule comprising a housing the housing including at least an optical window, the housing enclosing at least: at least one imaging camera (el. 24); at least two illumination sources for illuminating a gastrointestinal tract site; an optical system (el. 116, 141) for imaging the gastrointestinal tract site onto the imaging camera, the optical system being separated from the optical window by a gap (el. 132- a gap – el. 116, 141), the camera imaging the site via the optical window and via the optical system and the illumination sources illumination the site directly via the optical window and not via the optical system (el. 120 illuminates thru 132); and a transmitter for transmitting an output of the imaging camera (el. 28) as specified in claim 15; wherein the optical system comprises an aspherical focusing lens (fig. 2, el. 29 or fig. 9, el. 141) as specified in claim 23; wherein the optical system further comprises at

least one collimator for collecting remittent light (el. 141) as specified in claim 24; wherein the transmitter comprises an internal electronic switch for converting a logic of a normally open switch to a normally closed logic or wherein a shutdown signal is sent from a control block for a period following activation of the capsule (col. 4, ln. 22-26, the fact the Iddan et al shows a system can be designed to images only when a muscles are squeezing to save power implies that the system through it transmitter controls the imaging camera and the illumination source and also the ability to send shutdown signal to the imager and transmitter to inactivate them) as specified in claims 25-29; and wherein the transmitter transmits via radio frequency (fig. 34, el. 32) as specified in claim 59. It is noted that Iddan et al does not particularly disclose that a light source comprises at least two illumination sources for illuminating. Alfano et al teaches the using of multiple light sources (col. 6, ln. 13-21 to illuminate the are of interest. And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Iddan et al by using multiple light sources as taught by Alfano et al. Doing so would help to better illuminate the imaging areas.

Re claim 57: Alfano et al further shows that the length of the imaging device is about 20 mm (col. 4, ln. 37-40).

8. Claims 58 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Alfano et al (US 6,240,312) and further in view Zhou et al (US 5,909,026).

As applied to claim 15 above, it is noted that the combination of Iddan et al and Alfano et al does not particularly disclose that the imaging camera is a CMOS imaging

camera as specified in claim 58. Zhou et al teaches that "an image device with on-chip frame memory suitable for imaging applications under low light condition wherein an active pixel sensor ("APS") (as specified in claim 16) is a light sensing device with sensing circuitry inside each pixel. Each active pixel includes a light sensing element and one or more active transistors within the pixel itself. The active transistors amplify and buffer the signals generated by the light sensing elements in the pixels. In comparison with the widely used charge coupled devices (CCDs), an APS device has a number of unique and beneficial features. These features include the ability to receive and process input signals with the active pixels without the charge transfer process inherent in CCDs. An APS device is also compatible with CMOS processes. Elimination of the charge transfer allows APS devices to have a higher readout rate than those of CCDs and also to maintain their performance as the array size increases. Compatibility with CMOS processes allows many signal processing functions and operation controls to be integrated on an APS chip" (col. 1, ln. 24- 40). And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Iddan et al and Alfano et al by using a CMOS imaging camera in place of the CCD imaging camera. Doing so would help to reduce cost of manufacturing and power consumption. Moreover, the active pixels of APS devices allow non-destructive readout and random access (col. 1, ln. 42-45).

9. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Alfano et al and Zhou et al (US 5,909,026) and further in view of Wong et al (US 6,594,036).

As applied to claims 15 and 58 above, it is noted that the combination of Iddan et al, Alfano et al and Zhou et al does not particularly disclose that the CMOS imaging camera comprises a correlated double sampler for processing an analog signal produced by the active pixel circuitry (col. 4, ln. 33-39) as specified in claims 17 and 20; the CMOS imaging camera comprises an analog to digital converter having serial output (fig. 2, el. 120) as specified in claims 18 and 20; the CMOS imaging camera comprises an encoding and randomizing unit for defining frame and row parameters and for priming digital signals for transmission (col. 1, ln. 46-64) as specified in claims 19-20. Wong et al teaches a detailed CMOS imaging device comprises the CMOS imaging camera comprises a correlated double sampler for processing an analog signal produced by the active pixel circuitry (col. 4, ln. 33-39); an analog to digital converter having serial output (fig. 2, el. 120); the CMOS imaging camera comprises an encoding and randomizing unit for defining frame and row parameters and for priming digital signals for transmission (col. 1, ln. 46-64). And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made when replacing the CCD imaging by the CMOS imaging would have included all of the important features associated with the CMOS imaging camera as taught by Wong et al. Doing so would help to reduce the bandwidth required to transmit signal wirelessly.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Alfano et al and further in view of Perkins et al (US 6,106,457).

As applied to claim 1, it is noted that the combination of Iddan et al and Alfano et al does not particularly disclose that the illumination sources include white LEDs. Perkins et al teaches "as with the other illumination assemblies described herein, other suitable light sources, such as low-power surface-mounted or bulb-type white LEDs, can also be substituted" (col. 15, ln. 40-43). And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of the combination of Iddan et al, and Alfano et al by using white LED source. Doing so would help to provide better images.

11. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iddan et al (US 5,604,531), in view of Alfano et al and further in view of Leising et al (US 6,117,529).

As applied to claim 1 above, it is noted that the combination of Iddan et al, Alfano and Zhou et al does not particularly disclose that the illumination source comprises a refracting crystal matrix having at least one blue LED chip integrated. Leising et al teaches the using of liquid crystal matrix for refraction and that organic materials which are chemically similar to the oligophenylene or polyphenylene, have proven to be especially suited for blue LED applications (col. 15, ln. 40-43). And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of the combination of Iddan et al and Alfano et al by including refracting crystal matrix having at least one blue LED chip integrated in the illumination system of Iddan et al and Alfano et al. Doing so would help to provide better illumination source for organic electroluminescence devices and displays.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Spivey et al (US 5,886,353) discloses an image device for producing images from electron-hole producing radiation.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

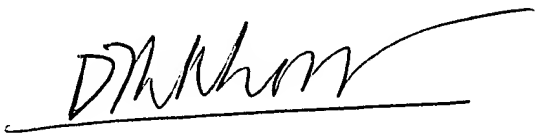
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhon T. Diep whose telephone number is 571-272-7328. The examiner can normally be reached on m-f.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ND
7/27/2005



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PRIMARY EXAMINER